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[469420-000]**Remarks**

Prior to this amendment, Claims 1-8, 11-18, and 32-47 were pending. As amended herein, claims 1-8, 16, 18, and 32-39 are canceled without prejudice. Claims 11-15, 17, 40, 41 and 44 are amended. Claims 48-50 are new. Claims 11 and 40 have been amended to more clearly define the invention. Support is found in Figure 3, p. 8, line 32 to p. 9, line 2, p. 10, lines 18-20, p. 17, lines 15-22, p. 18, line 18 to p. 19, line 20. Claims 12-15 also are amended to more clearly define the invention. Claim 17 is amended to more clearly define the invention. Support is found at p. 6, lines 14-16, Figure 3, p. 9, lines 27-30 and p. 29, lines 2-9. New claims 48-50 find support at p. 14, lines 4-7, p. 16, lines 1-9, p. 16, line 18 to p. 17, line 11, and p. 17, line 15 to p. 18, line 19 and in the examples. Applicants submit that no new matter is introduced by way of the amendments submitted herein. Applicants respectfully request entry of the amendments.

**I. Interview Summary**

Applicants acknowledge with appreciation the Examiner's helpful interview on July 1, 2004. Applicants' representative and the Examiner discussed potential claim amendments in light of the cited references.

**II. Double Patenting Rejection**

In the Office Action, claims 1-8, 11-18, and 32-47 were rejected under the doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 and 27-30 of U.S. Patent 6,327,410 ("410 Patent") and over claims 22-38 and 57-58 of U.S. Patent 6,023,540 ("540 Patent").

While Applicants disagree that the currently pending claims are obvious over those of the '410 and '540 Patents, in order to expedite allowance of the application, Applicants will consider a terminal disclaimer if necessary and appropriate when there is an indication of otherwise.

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allowable subject matter. Applicants note that with respect to claims 1-8 and 32-39, the rejection is moot as these claims are canceled without prejudice.

### III. § 112, ¶ 2 Rejections

Claims 1-8, 11-18 and 32-47 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter Applicants regard the invention. The Examiner indicated that the claims were confusing with respect to the first and second optical signatures.

Initially, Applicants submit that with respect to claims 1-8 and 32-39 the rejection is moot as the claims have been canceled herein. With respect to claims 11-18 and 40-47, Applicants note that without necessarily agreeing with the propriety of the rejection, Applicants have amended the claims to more clearly define the invention. The Examiner requested Applicants to point out where the language is supported by the original disclosure. Applicants have complied with this request as noted in the Remarks section. Accordingly, Applicants respectfully request the Examiner to withdraw the rejection.

### IV. § 102(b) Rejections

Claims 1-8, 11-18, and 32-47 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,822,746 to Walt ("Walt I") or U.S. Patent 5,143,853 to Walt ("Walt II"). Applicants submit that with respect to claims 1-8 and 32-39 the rejection is moot as the claims have been canceled herein. With respect to claims 11-18 and 40-47, Applicants respectfully traverse the rejection. In addition, Applicants note that without necessarily agreeing with the propriety of the rejection, Applicants have amended the claims to more clearly define the invention. Applicants submit that the claims are novel over the cited references.

The Office Action points to the Walt references as describing analytical chemistry systems comprising a population of beads encoded with fluorescent dyes. However, the mere description of beads with multiple dyes on them does not describe the claimed method.

It is well settled that an anticipatory prior art reference must teach "*all of the elements and limitations contained in the claims.*" ATD Corp. v. Lydall, Inc., 159 F.3d 534, 545 (Fed.

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Cir. 1998). Here, however, it is respectfully submitted that the Office has not established that Walt I and Walt II teach all of the elements of claim 11, 40 and those that depend from them.

**A. Independent Claim 11 Is Not Anticipated by Walt I or Walt II**

Independent claim 11 is directed to a method that comprises, in part, preparing separate subpopulations of beads, each subpopulation carrying a chemical functionality. The method further comprises, in part, *encoding* an optical signature of the beads in each subpopulation with a description of the chemical functionality carried by that subpopulation. The method further comprises, in part, decoding the optical signature of the beads to identify the chemical functionalities.

In contrast, as discussed above, Walt I and Walt II disclose methods for the detection of an analyte of interest in a fluid sample. The method includes the use of beads to which dyes are attached. However, the mere description in the Walt references of beads with dyes on them does not describe the claimed method comprising, among other things, preparing separate subpopulations of beads, *encoding* an optical signature of the beads in each subpopulation with a description of the chemical functionality carried by that subpopulation and decoding the optical signature to identify the chemical functionality. The Examiner has not pointed to any passages of Walt I and II that describe the dyes as containing any encoding information regarding the identity of a particular chemical functionality.

Claim 11, therefore, stands in condition for allowance. Reconsideration and withdrawal of the § 102(b) rejection is respectfully requested.

**B. Independent Claim 40 Is Not Anticipated by Walt I or Walt II**

Independent claim 40 is directed to a chemical analysis method. The method comprises, in part, contacting a population of beads with a composition comprising at least a first target. The population of beads comprises a first and second subpopulation, the beads of each subpopulation comprising a chemical functionality for binding a target analyte and an optical signature which is *encoded* with a description of said chemical functionality carried by the bead.

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of the subpopulation. In addition, the method comprises, in part, decoding the optical signature of the beads to identify the first chemical functionality.

Walt I and II are discussed above. However, it is respectfully submitted that the Office has not established that Walt I or II teach all of the elements of claim 40. In particular, as explained above, the mere description in the Walt references of beads with multiple dyes on them does not describe the claimed chemical analysis method comprising, among other things, a population of beads comprising a first and second subpopulation and a second optical signature which is *encoded* with a description of said chemical functionality carried by the bead of the subpopulation, because the cited passages of Walt I and II do not describe the dyes as containing any encoding information regarding the identity of a particular chemical functionality.

Claim 40, therefore, stands in condition for allowance. Reconsideration and withdrawal of the § 102(b) rejection is respectfully requested.

#### C. Claims Depending from Claims 11 and 40 Are Patentable

Because the remaining claims depend directly or indirectly from claims 11, or 40 and incorporate all the limitations of those claims, the above argument obviates the basis for this ground of rejection. Thus, the remaining claims are not anticipated by Walt I or Walt II. Reconsideration and withdrawal of the rejection is respectfully requested.

#### V. § 102(e) Rejection

Claims 1-8, 11-18, and 32-47 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 5,814,524 to Walt et al. ("Walt III"). Applicants submit that with respect to claims 1-8 and 32-39 the rejection is moot, as the claims have been canceled herein. With respect to claims 11-18 and 40-47, Applicants respectfully traverse the rejection. In addition, Applicants note that without necessarily agreeing with the propriety of the rejection, Applicants have amended the claims to more clearly define the invention. It is respectfully submitted that Walt III does not anticipate claims 11-18, and 40-47.

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[469420-000]**A. Independent Claim 11 Is Not Anticipated by Walt III**

As described above, claim 11 is directed to a method that comprises, in part, preparing separate subpopulations of beads, each subpopulation carrying different chemical functionalities. The method further comprises, in part, *encoding* an optical signature of the beads in each subpopulation with a description of the chemical functionality carried by that subpopulation. The method further comprises, in part, decoding the optical signature of the beads to identify the chemical functionality.

The passages of Walt III cited by the Examiner disclose an optical sensor apparatus for far-field viewing and imaging as well as for the optical detection and analytical measurement of at least one species of analyte in a remotely-positioned fluid sample. However, here there is no teaching or suggestion that each subpopulation carries a chemical functionality for binding a target analyte and comprise an optical signature which is encoded with a description of the chemical functionality carried by the bead of the subpopulation.

That is, Walt III elegantly describes a sensor apparatus for detection of an analyte in a remotely-positioned fluid sample. However, the Office Action fails to establish that Walt III discloses separate subpopulations wherein the beads in each subpopulation have an optical signature which is encoded with a description of the chemical functionality carried by that subpopulation.

Applicants submit that the Examiner has failed to establish that there is any teaching or suggestion of encoding an optical signature of the beads in each subpopulation with a description of the chemical functionalities carried by that subpopulation. Applicants respectfully submit that the claims are novel in light of Walt III.

Claim 11, therefore, stands in condition for allowance. Reconsideration and withdrawal of the § 102(e) rejection is respectfully requested.

**B. Independent Claim 40 Is Not Anticipated by Walt III**

As discussed above, independent claim 40 is directed to a chemical analysis method. The method comprises, in part, contacting a population of beads with a composition comprising at least a first target. The population of beads comprises a first and second subpopulation, the

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beads of each subpopulation comprising a chemical functionality for binding a target analyte and an optical signature which is *encoded* with a description of said chemical functionality carried by the bead of the subpopulation. In addition, the method comprises, in part, decoding the optical signature of the beads to identify the first chemical functionality.

Walt III is discussed previously. However, Applicants submit that the Examiner has failed to point to any teaching or suggesting of an optical signature which is *encoded* with a description of said chemical functionality carried by the bead of the subpopulation. That is, Walt III discloses the use of a plurality of dye reagents on a substrate surface that generate multiple signals indicative of the *presence of an analyte*. Applicants submit that this is distinct from a second optical signature encoded with a *description of the chemical functionality carried by the bead of the subpopulation*, as claimed. Walt III, therefore, does not disclose the invention of claim 40.

Claim 40, therefore, stands in condition for allowance. Reconsideration and withdrawal of the § 102(e) rejection is respectfully requested.

**C. Claims Depending from Claims 11 and 40 Are Patentable**

Because the remaining claims depend directly or indirectly from claims 11 or 40 and incorporate all the limitations of those claims, the above argument obviates the basis for this ground of rejection. Thus, Walt III does not anticipate the remaining claims. Reconsideration and withdrawal of the rejection is respectfully requested.

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[469420-000]**Conclusion**

Applicants respectfully submit that claims 11-18 and 40-47 are in condition for allowance. Reconsideration and a Notice of Allowance for all pending claims is respectfully requested. Please direct any calls in connection with this application to the undersigned attorney at 415-544-7085.

Respectfully submitted,

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